

Claims

What is claimed is:

1 1. A method for parsing and generating data structures
2 comprising the steps of:
3 utilizing sizeof and offsetof functions, defining a length and a location
4 of each parameter of a data structure; and
5 storing said length and said location of each said parameter of the
6 data structure within an identifier object in a data structure definition.

1 2. A method for parsing and generating data structures as recited
2 in claim 1 wherein the data structure is an ATM information element (IE) and
3 wherein the step of utilizing sizeof and offsetof functions, defining a length
4 and a location of each parameter of a data structure includes the step of
5 utilizing sizeof and offsetof functions, defining a length and a location of each
6 data parameter of said ATM information element (IE).

1 3. A method for parsing and generating data structures as recited
2 in claim 1 wherein said ATM information element (IE) is a Connection
3 Identifier IE and wherein the step of utilizing sizeof and offsetof functions,
4 defining a length and a location of each parameter of a data structure
5 includes the step of utilizing sizeof and offsetof functions, defining a length
6 and a location of each data parameter of said Connection Identifier IE.

1 4. A method for parsing and generating data structures as recited
2 in claim 3 includes the step of utilizing sizeof and offsetof functions, defining
3 a length and a location of a preferred/exclusive parameter.

1 5. A method for parsing and generating data structures as recited
2 in claim 3 includes the step of utilizing sizeof and offsetof functions, defining
3 a length and a location of a virtual path connection identifier (VPCI)
4 parameter.

1 6. A method for parsing and generating data structures as recited
2 in claim 3 includes the step of utilizing sizeof and offsetof functions, defining
3 a length and a location of a virtual channel identifier (VCI) parameter.

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1 7. A method for parsing and generating data structures as recited
2 in claim 4 wherein the step of storing said length and said location of each
3 said parameter of the data structure within an identifier object in a data
4 structure definition includes the steps of storing said length and said location
5 of said preferred/exclusive parameter in a preferred/exclusive parameter
6 identifier object in said data structure definition.

1 8. A method for parsing and generating data structures as recited
2 in claim 5 wherein the step of storing said length and said location of each
3 said parameter of the data structure within an identifier object in a data
4 structure definition includes the steps of storing said length and said location
5 of said virtual path connection identifier (VPCI) parameter in a VPCI
6 parameter identifier object in said data structure definition.

1 9. A method for parsing and generating data structures as recited
2 in claim 6 wherein the step of storing said length and said location of each
3 said parameter of the data structure within an identifier object in a data
4 structure definition includes the steps of storing said length and said location
5 of said virtual channel identifier (VCI) parameter in a VCI parameter identifier
6 object in said data structure definition.

1 10. A compiler and platform independent framework for parsing
2 and generating data structures comprising:
3 means for defining a length and a location of each parameter of a
4 data structure utilizing sizeof and offsetof functions; and
5 means for storing said length and said location of each said
6 parameter of the data structure within an identifier object in a data structure
7 definition.

1 11. A compiler and platform independent framework for parsing
2 and generating data structures as recited in claim 10 is used by procedural
3 table-driven or object rules-driven methods for parsing and generating data
4 structures.

1 12. A compiler and platform independent framework for parsing
2 and generating data structures as recited in claim 10 is used for parsing and
3 generating of protocol data units (PDUs) in data communication messages.

1 13. A compiler and platform independent framework for parsing
2 and generating data structures as recited in claim 10 is used for parsing and
3 generating of control code for writing and reading headers for data storage.

1 14. A computer program product for parsing and generating data
2 structures in a computer system, said computer system having a processor;
3 a memory controller coupled to said processor by a system bus; a main
4 memory coupled to said memory controller; said computer program product
5 including a plurality of computer executable instructions stored on a
6 computer readable medium, wherein said instructions, when executed by
7 said computer system, cause said computer system to perform the steps of:
8 utilizing sizeof and offsetof functions, defining a length and a location
9 of each parameter of a data structure; and

10 storing said length and said location of each said parameter of the
11 data structure within an identifier object in a data structure definition.